

SEMICONDUCTOR WITH A NITRIDED SILICON GATE OXIDE AND
METHOD

5

ABSTRACT OF THE DISCLOSURE

A method of fabricating a transistor includes providing a semiconductor substrate having a surface and forming a nitride layer outwardly of the surface of the substrate. The nitride layer is oxidized to form a nitrided silicon oxide layer comprising an oxide layer beneath the nitride layer. A high-K layer is deposited outwardly of the nitride layer, and a conductive layer is formed outwardly of the high-K layer. The conductive layer, the high-K layer, and the nitrided silicon oxide layer are etched and patterned to form a gate stack. Sidewall spacers are formed outwardly of the semiconductor substrate adjacent to the gate stack, and source/drain regions are formed in the semiconductor substrate adjacent to the sidewall spacers.